ORIGINAL ARTICLE

Effects of Short-term Exercise Program on Blood Glucose, Lipids, and HbA1c in Type 2 Diabetes

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ABSTRACT

OBJECTIVE: For decades, exercise has been considered as a cornerstone for managing diabetes. The current study aimed to determine the effects of short-term exercise on blood glucose, lipids and HbA1C in type-2 diabetes mellitus.

MATERIALS AND METHODS: A total of 61 diabetic patients were randomly selected. Later, subjects with capability of doing exercise took part in a special four-week exercise program. The blood glucose, lipid levels (before and after 4 weeks) and HbA1C (before and three months after exercise program) of 32 subjects were measured and compared in the time scales.

RESULTS: Our results showed a significant reduction in blood glucose and lipid concentrations. However, the reduction observed in HbA1C was not significant (P=0.12). Comparison of pre- and post-exercise results demonstrated a significant improved glycemic control.

CONCLUSION: The findings confirm the benefits of exercise training in type 2 diabetic patients. There are many studies which support the importance of physical activities program in controlling and preventing the common metabolic disorder and its complication.

KEY WORDS: Diabetes, Short-term exercise, Blood glucose level, HbA1C.

INTRODUCTION

Diabetes Mellitus (DM) is a multi-system disease and a serious health problem around the world (1). According to the World Health Organization, at least 285 millions have diabetes worldwide and the number of people suffering from diabetes is expected to be more than double by 2030 (1,2).

Diet, exercise, careful control, medication, and instruction are the five main components of management and care in diabetes (2, 3). For many years, exercise has been mentioned along with medication and nutrition as major principles in management of diabetes (4, 5). Exercise is considered as an important element in treatment of diabetes reducing blood glucose, cardio-vascular risk factors, and cardiac complications. Cohort's studies have demonstrated that the physical activities and high levels of aerobic exercises result in considerable decline in cardiac complications and death (5, 7, 8).

Considering the effects of exercise on good diabetes control, clinical studies emphasize on the fact that a regular aerobic exercise has profound effect on preventing diabetes in people who are susceptible for diabetes. The studies show that the diet in itself, and the

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